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April 26, 2010

WOODARD &CURRAN

Becky Blais
Division of Land Resource Regulations
Bureau of Land & Water Quality
Department of Environmental Protection
State of Maine
17 State House Station
Augusta, ME 04333-0017

Subject: Site Location of Development Law and Natural Resources Protection Act Applications on behalf of Calais LNG Project Company, LLC & Calais LNG Pipeline Company, LLC, Calais Response to MEDEP Comment letter dated March 30, 2010

Dear Ms. Blais:

This letter is to submit additional information and clarification to address the comments provided to you by David Waddell in a Technical Review Memorandum dated March 29, 2010, which specifically reference Sections 12 and 14 of the Site Location of Development (SLOD) Permit application submitted to you in January, 2010. The numbered responses correspond to the numbered comments in David's letter.

The responses below refer to the Erosion and Sedimentation Control and Revegetation Plan (E&SCR Plan), which is included in Section 14 of the SLOD (as Appendix 14-A). While neither SLOD Section 12 nor 14 will have text updated as a result of these responses, several plans have been updated or added, and the E&SCR Plan will be updated, as described below. A table at the end of this letter lists the figures and tables added or revised in response to these comments from the Department.

1. No response required. We appreciate confirmation that the E&SCR Plan provided is an acceptable approach to meeting the General Standards of the 2006 Stormwater Management rules.

2. Attached please find Figures 17R and 18R, dated April 2010. These correct and replace the E&SCR Plan Figures 17 and 18 originally submitted. The siltation fence fabric trench is now shown on the uphill side of the fence.

3. Attached please find Figure 27, an Erosion Control Mix Berm detail, which is to be added to the E&SCR Plan. This detail makes clear that stump grindings are acceptable for installation of Erosion Control Mix Berms, but that wood chips are not.

4. Attached please find Figures 22R and 23R dated April 2010. These clarify and replace the E&SCR Plan Figures 22 and 23 originally submitted. They are included in the E&SCR Plan to inform the Contractor of the need and method for the installation of erosion control blanket at the toe of constructed slopes when site topography may result in areas of concentrated flow that need additional erosion control measures until vegetation is established.

5. As described in the E&SCR Plan Section 12.3.12, stream crossings will be made "in the dry" either when there are insignificant flows, or through the use of temporary stream diversions. In the following paragraphs we provide information about the crossing and diversion methods that will likely be used for the crossings at Mileposts 10.15, 11.57, and 18.33. These

descriptions are consistent with the typical crossing methods described in the E&SCR Plan, and we do not anticipate that any significant variances will be necessary.

It is anticipated the crossing at Milepost 10.15 (Conic Stream) will be accomplished using a dam and flume crossing method. As with all stream, road, and railroad crossings it is expected a tie-in crew, a specialty pipeline installation crew separate from the mainline crew, will make the crossing installation. This allows the installation to be scheduled independent of the main pipeline installation and accommodate permit, streamflow, and weather conditions. Thus, the crossing will be made when streamflow is low and no significant precipitation is forecast. At the crossing location, the channel is less than ten feet wide. Based on field observations, the width of inundated channel at the time of construction of the crossing is likely to be less than five feet. It is anticipated the crossing will be completed in one day, including restoring grades to original conditions. The contactor will size the flume to convey the anticipated flow based on anticipated streamflow at the time of construction taking into account watershed area, upstream cover types, and the relationship between recent rainfall events and the calculated time of concentration for the watershed. The crossing will not be made when significant storm events are forecast.

It is anticipated the crossing at Milepost 11.57 (Stony Brook) will be accomplished using a dam and pump crossing method. As described above, it is expected that a tie-in crew will make the crossing installation when streamflow is low and no significant precipitation is forecast. The contractor may use a metal plate, water filled bag, or port-a-dam type cofferdam, dependent upon his experience with each and the flow in the stream at the time of the crossing. The contractor will size the pump to transfer the flow around the work area using the method previously described for calculating the size of the flume – this crossing is expected to be accomplished in 48 hours. The width of the stream channel at the crossing location is approximately 38 feet wide. Based on field observations, the width of the inundated channel at the time of construction of the crossing is likely to be less than 10 feet.

It is anticipated the crossing at Milepost 18.33 (Anderson Brook) will be accomplished using dam and flume crossing method. The location has a shallow channel in a relatively wide flood plain. The channel is approximately 25 feet wide and it is expected that the width of inundated channel at the time of construction will also be that wide. It is expected that the Contractor will use a cofferdam, of one of the types previously described, to channel the water into a flume to flow through the construction area. The flume will be sized according to the method previously described. It is anticipated this stream crossing will be accomplished in 48 hours.

6. E&SCR Plan Section 2.3.11 states that areas disturbed for installation of a temporary crossing will be stabilized using temporary vegetation or mulching within 48 hours of completing the installation. This was intended to include the areas adjacent (within 75 feet) of the stream, as is stated in Section 2.3.12 for temporary stream diversions. We propose that the first sentence of the second paragraph of Section 2.3.11 be replaced with the following,

   "Areas within 75 feet of the waterbody disturbed during installation of a temporary stream crossing shall be stabilized using temporary vegetation or mulching within 48 hours of completing the installation."

7. The erosion and sediment controls shown on SLOD Figure 12-6B are for permanent measures at the Terminal Site; temporary erosion and sediment control measures that will be employed during construction of the Terminal Site are shown on the details in the E&SCR Plan. Attached

please find detailed Grading Plans of the Terminal Site (SLOD Figures 12-5A REV through 12-5H REV), which have been revised to show critical locations for installation of temporary erosion and sediment control measures.

8. Calais LNG will employ an Environmental Inspector during construction of the project in accordance with Federal Energy Regulatory Commission requirements. The Environmental Inspector's duties, responsibilities, and authority are described in detail in Section 1.4 of the E&SCR Plan. The Environmental Inspector will be employed by Calais LNG and will be independent of the construction contactors. However, we do not advise that the Environmental Inspector need be a professional engineer, so long as that person has sufficient knowledge of erosion and sediment control and stormwater management measures. Inspections will be conducted and records or logs of those inspections will be kept on a form similar to the one in Appendix A of the E&SCR Plan. A condition of the SLOD Permit that would require the Environmental Inspector to inform the DEP within 14 days of final stabilization of the pipeline construction corridor is consistent with practice in this area for those types of projects.

9. As described in the application, the project will create approximately 69 acres of development – 66.7 acres on land and 2.1 acres of Pier. Portions of the total developed area will not be subject to Chapter 500 regulations either because they will minimally maintained, because the materials and/or surfaces used for its construction generate minimal quantities of stormwater runoff (process gravel or riprap slopes – see details 3 and 5 on SLOD Figure 12-6B), or because it will drain to the fire pond and the runoff will be treated as an industrial wastewater discharge.

   The areas are detailed below. The areas that will be provided treatment are detailed in Revised SLOD Tables 12-10 and 12-11, attached. Please note that there is a slight difference in the numbers below and those provided in the application for the minimally maintained and the Firewater pond drainage area (wastewater discharge area). This is because the drainage area for the Firewater pond is 22 acres (as stated in the application) but 2 acres of that is actually undeveloped area. Therefore, there is actually only 19.9 acres of developed area that drains to the Firewater pond. The area of minimally maintained surface has therefore also been adjusted to account for this in the table below. The minimally maintained area includes the 50' wide area beyond the high security fence that must be kept clear of trees and other woody vegetation, which covers a significant portion of the site.

Terminal Site Developed Areas

Description	Developed Area (acres)	Impervious Area (acres)	Non-Impervious Area (acres)
Process Gravel	4.0	0	4.0
Minimally maintained/riprap	23.9	0	23.9
Area Regulated per Wastewater Discharge Permit	19.9	13.6	6.3
Area Regulated per Chapter 500 Regulations	21.2	12.1	9.1
Total Developed Area	**69.0**	**25.7**	**43.3**
Total Area Treated	19.3	11.7	7.6

10. Attached please find SLOD Table 12-10 rev, which reflects the proposed impervious and developed areas at the Terminal Site, including, and the proposed treatment for each. The table has been revised to include the area contributing to the vegetated buffer,. Also, the descriptor "Developed" has been changed to "Non-Impervious", to accurately describe what is listed. The areas subject to Chapter 500 regulation and the areas for which treatment are provided did not change, however, SLOD Table 12-11 rev, attached now shows "Developed Area" as the sum of impervious and non-impervious (e.g. landscaped) areas.

11. Attached please find new SLOD Figure 12-3D, which graphically shows the contributing drainage area of each treatment measure on the Terminal Site.

12. The Mainline Valve and Interconnect Facility sites will include construction of Process Gravel areas using the Process Gravel Section Detail on SLOD Figure 12-6B. Those areas will be highly pervious and provide stormwater storage. As shown in the following table, the weighted CN Value for both sites will be less post-construction than it is pre-construction. Construction of these sites is described in the fourth paragraph of Section 12.2.1

Interconnection and Mainline Valve Stations CN Values

SOIL HSG CLASS	AREA (SF)	COVER TYPE	CN VALUE
Interconnect Facility – Pre-Development			
C	12,643	Poor grass area	86
Total Area	12,643	Weighted CN Value=	**86**
Interconnect Facility – Post-Development			
C	11,050	Process gravel	55
C	1,393	Gravel drive	89
C	200	Concrete pad	98
Total Area	12,643	Weighted CN Value=	**59**
Mainline Valve Station – Pre-Development			
D	6,025	Good woods	77
Total Area	6,025	Weighted CN Value=	**77**
Mainline Valve Station – Post-Development			
D	5,625	Process gravel	60
D	400	Gravel drive	89
Total Area	6,025	Weighted CN Value=	**62**

Attached please find SLOD Figures 12-7A REV and 12-7B REV, which are revisions to SLOD Figures 12-7A and 12-7B, that identify the area where the Process Gravel material will be installed, and makes reference to the Process Gravel Section Detail on SLOD Figure 12-6B.

13. SLOD Figure12-6A (in the original application) illustrates two options for the VUSF pipe bedding. The Table provided on the detail provides elevations for key elements of the construction for each VUSF. The difference between the options would affect the elevation of the underdrain piping, but that elevation is not specified in the table. The design allows for the both options without having to adjust the listed elevations, because the difference between the options would occur between Elevation B (bottom of pond) and Elevation C (outlet invert of outlet pipe). There is adequate elevation in all cases to lower the inlet end of the outlet pipe to

accommodate the thicker pipe bedding layer and still have adequate slope on the outlet pipe. Therefore, SLOD Figure 12-6A has not been revised.

14. Cross-section A on SLOD Figure 12-6C is through the entrance road and buffer shown in plan view on Figure 12-5G. The cross-section is correct. The table below matches cross-sections to their plan view locations for ease of reference.

CROSS-SECTION PER SLOD FIGURE 12-6C	CUT PLAN VIEW LOCATED ON
A	Figure 12-5G
B	Figure 12-5H
C	Figure 12-5D
D	Figure 12-5D

15. The Environmental Inspector previously described in our response to comment #8 will also be responsible for inspection oversight of the Vegetated Underdrained Soil Filters. As noted in that response, The Environmental Inspector may or may not be a professional engineer, but will have knowledge of erosion and sediment control, including the construction of stormwater control measures. Similar to the inspections for the construction of the Pipeline, regular inspections of erosion, sediment, and other stormwater control measures will be made during construction of the Terminal site, including the VUSFs. A log of inspections similar to the one attached in Appendix A of the E&SCR Plan will also be kept. A condition of the SLOD Permit that would require the Environmental Inspector to inform the DEP of construction of each VUSF within 14 days of completion of its construction is consistent with practice in this area for these types of projects.

The table below lists the revised Figures and Tables that are referenced in and provided with this response to the Department's comments.

RESPONSE #	FIGURE/TABLE	SECTION	REVISED/NEW	NOTES
2	Figure 17R	E&SCR	revised	Silt fence trench location revised
2	Figure 18R	E&SCR	revised	Silt fence trench location revised
3	Figure 27	E&SCR	new	Erosion Control Berm Mix Detail
4	Figure 22R	E&SCR	revised	Clarify need for and installation of erosion control blanket
4	Figure 23R	E&SCR	revised	Clarify need for and installation of erosion control blanket
7	Figures 12-5A rev through 12-5H rev	SLOD Section 12	revised	Added critical locations of temporary erosion and sedimentation controls
9, 10	Table 12-10 rev	SLOD Section 12	revised	Revised to include all treatment measures at the Terminal Site
9, 10	Table 12-11 rev	SLOD Section 12	revised	Clarified Developed and Non-Impervious areas.
11	Figure 12-3D	SLOD Section 12	new	New figure showing clearly drainage areas for each treatment measure at the Terminal Site
12	Figure 12-7A rev	SLOD Section 12	revised	Clarify where Process Gravel will be used at Mainline Valve site
12	Figure 12-7B rev	SLOD Section 12	revised	Clarify where Process Gravel will be used at Interconnect Facility site

Thank you for the opportunity to provide responses to Dave Waddell's comments on the stormwater aspects of the proposed project. We trust the responses will adequately address his concerns, but please do not hesitate to contact us if you need further information or clarification.

Sincerely,

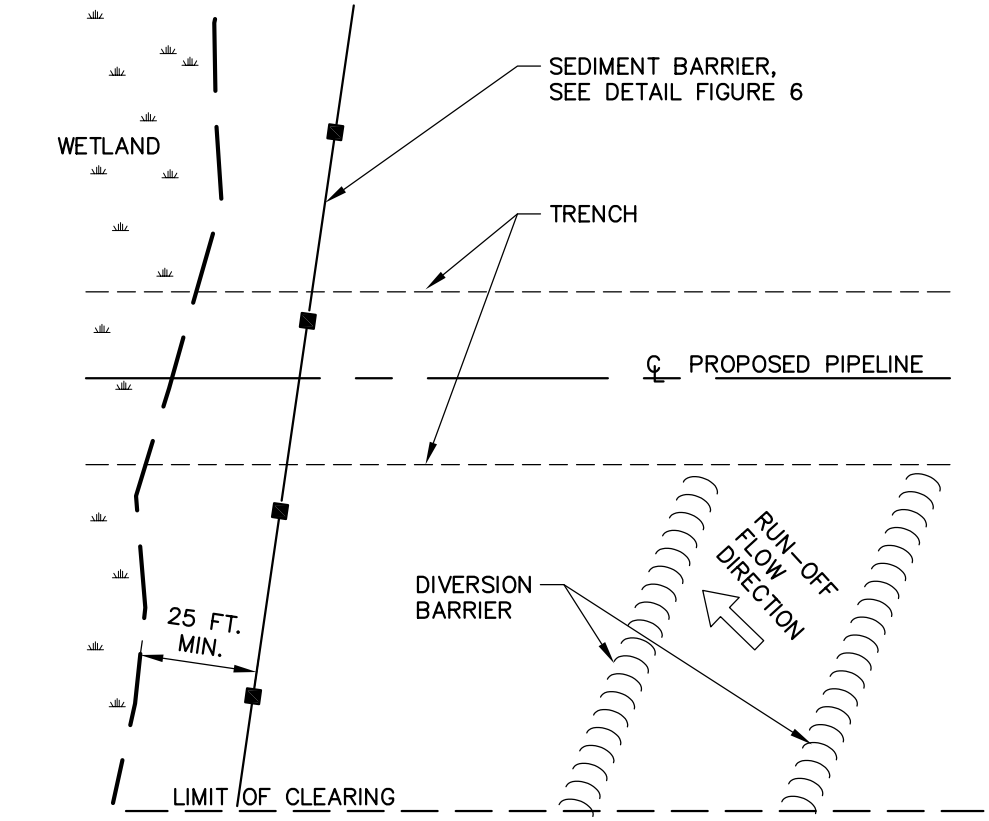
WOODARD & CURRAN INC.

Thomas R. Eschner
Project Director

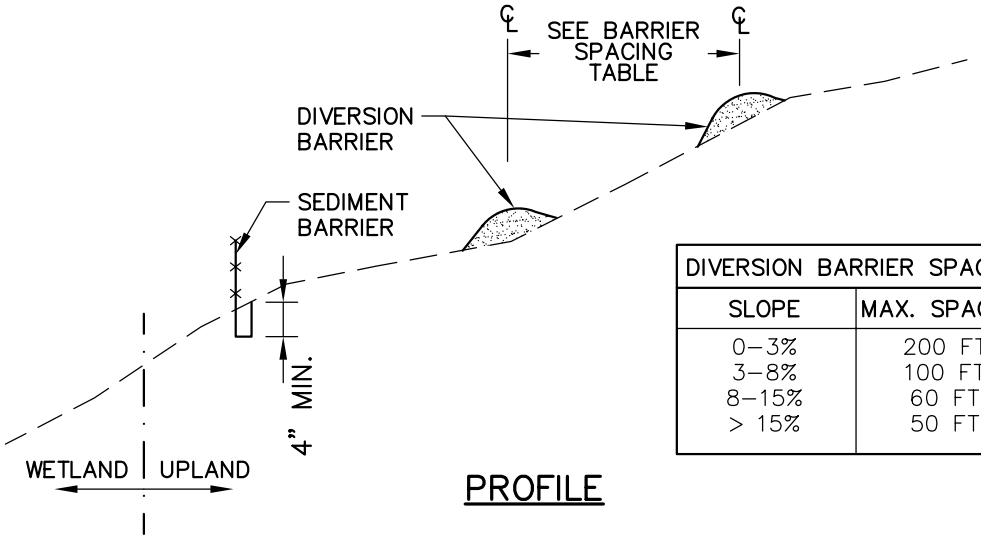
TRE/gdv
219431.02

Enclosure(s)

cc: Art Gelber, Calais LNG



PLAN



DIVERSION BARRIER SPACING	
SLOPE	MAX. SPACING
0–3%	200 FT.
3–8%	100 FT.
8–15%	60 FT.
> 15%	50 FT.

PROFILE

NOTES:

1. INSPECT FOR AREAS OF EROSION ALONG UPHILL SIDE OF DIVERSION BARRIER. INSTALL ADDITIONAL BARRIERS, 2" STONE OR EROSION CONTROL MAT TO PREVENT EROSION UNTIL AREA IS STABILIZED.

2. INSTALL DIVERSION BARRIER ON UPHILL SIDE OF PIPELINE TRENCH TO PREVENT RUN-OFF FROM ENTERING THE TRENCH EXCAVATION.

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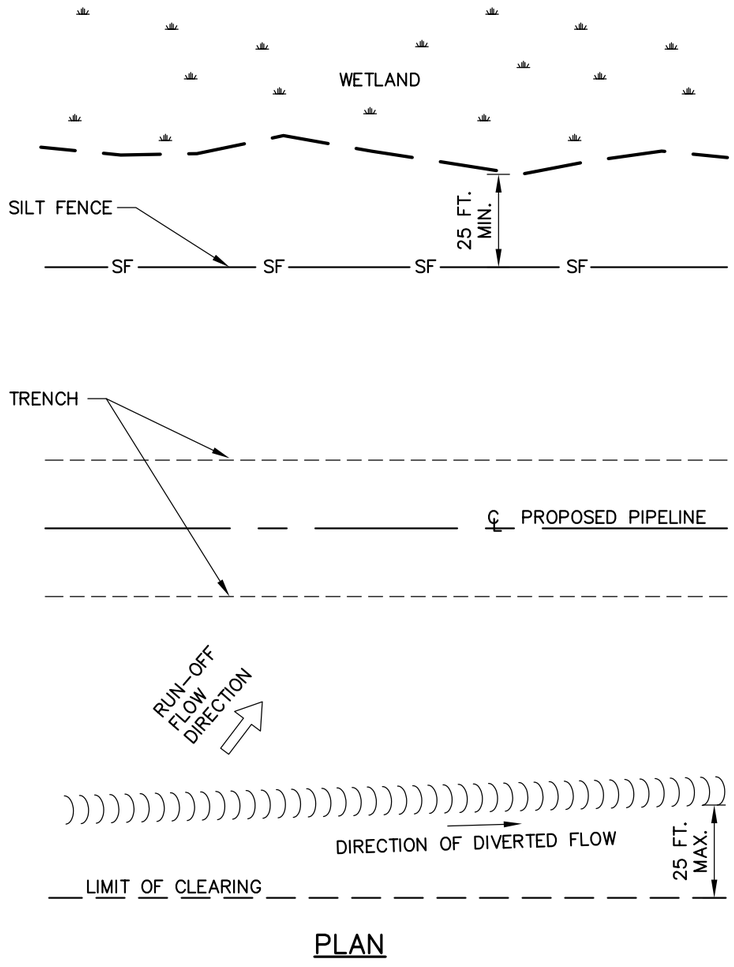
PIPELINE CROSSING INTO WETLAND AT BASE OF SLOPE

DESIGNED BY: WHC	CHECKED BY: WHC
DRAWN BY: NTD	219431-fig 18R.dwg

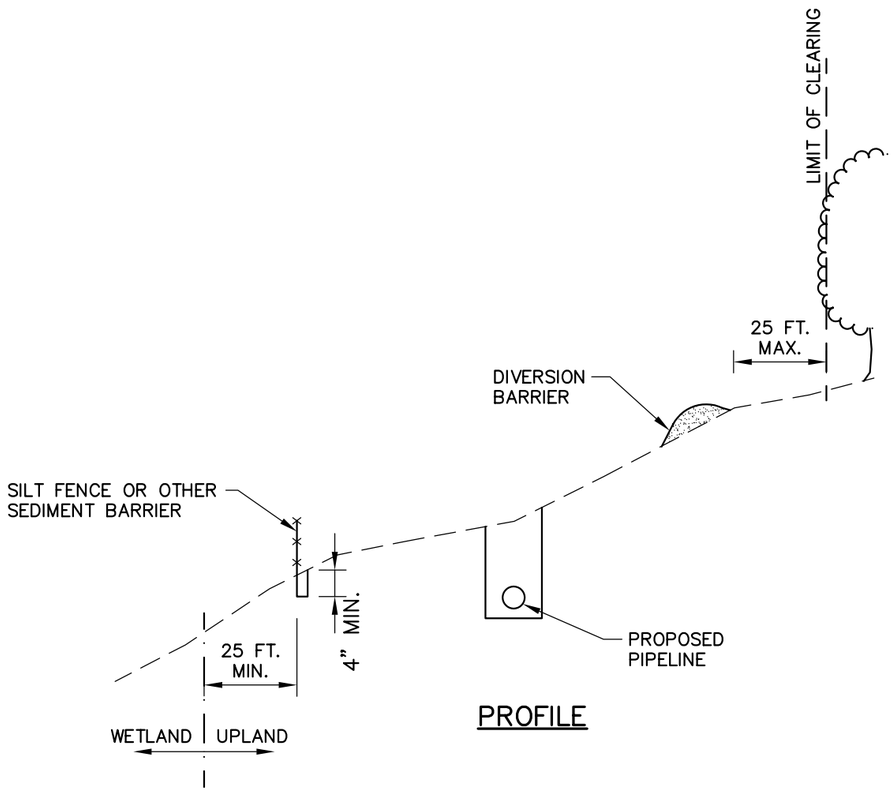
CALAIS LNG

JOB NO: 219431	
DATE: APRIL 2010	
SCALE: AS NOTED	

FIGURE 18R



PLAN



PROFILE

WETLAND PROTECTION PARALLEL TO PIPELINE INSTALLATION

N.T.S.

NOTES:

1. INSPECT FOR AREAS OF EROSION ALONG UPHILL SIDE OF DIVERSION BARRIER. INSTALL ADDITIONAL BARRIERS, 2" STONE OR EROSION CONTROL MAT TO PREVENT EROSION UNTIL AREA IS STABILIZED.
2. INSTALL DIVERSION BARRIER ON UPHILL SIDE OF PIPELINE TRENCH TO PREVENT RUN-OFF FROM ENTERING THE TRENCH EXCAVATION.

CALAIS LNG

WETLAND PROTECTION PARALLEL TO PIPELINE INSTALLATION

DESIGNED BY: WHC
DRAWN BY: NTD
CHECKED BY: WHC
219431-fig 17R.dwg

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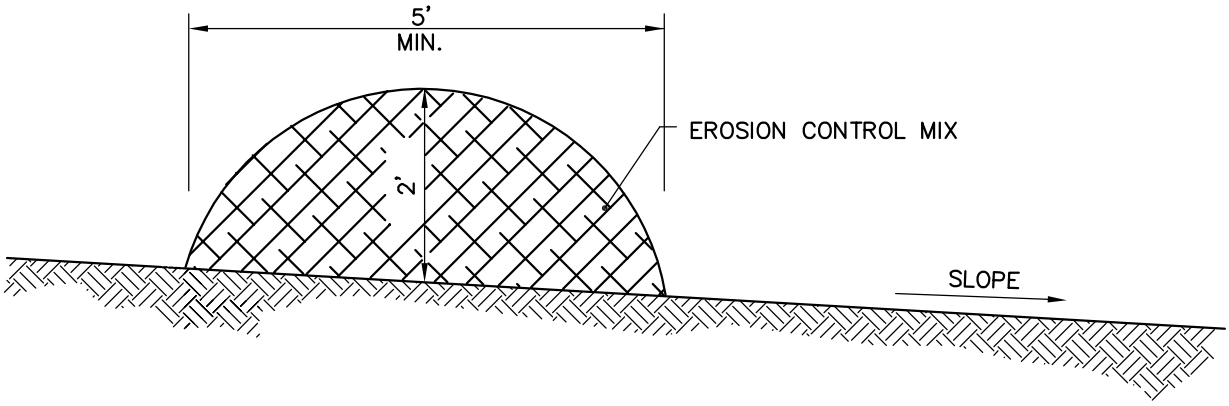
JOB NO: 219431.12
DATE: APRIL 2010
SCALE: N.T.S.

FIGURE 17R

NOTES:

- CONSTRUCT CONTINUOUS SOIL MIX BERM.
- DEPENDING ON LOCATION, BERM MAY BE USED WITH OR WITHOUT SILT FENCE.
- EROSION CONTROL MIX BERMS SHALL BE PLACED ALONG THE CONTOUR OF THE SLOPE.
- BERMS ON SLOPES < FIVE PERCENT OR AT BOTTOM OF A STEEPER SLOPES UP TO 20' LONG.
- BARRIER SHALL BE A MINIMUM 1' IN HEIGHT AS MEASURED ON THE UPHILL SIDE OF BARRIER.
- BARRIER SHALL BE A MINIMUM OF 2' WIDE, SHALL BE WIDER ON LONGER OR STEEPER SLOPES TO ACCOMMODATE THE ADDITIONAL RUNOFF.
- EROSION CONTROL MIX MAY BE PLACED IN A SYNTHETIC TUBULAR NETTING.
- EROSION CONTROL MIX SHALL CONSIST OF 80 – 100% ORGANIC MATERIAL AND MAY INCLUDE: SHREDDED BARK, STUMP GRINDINGS, COMPOSTED BARK, OR FLUME GRIT AND FRAGMENTED WOOD GENERATED FROM WATER–FLUME LOG HANDLING SYSTEMS. WOOD CHIPS, GROUND CONSTRUCTION DEBRIS, REPROCESSED WOOD PRODUCTS OR BARK CHIPS ARE NOT ACCEPTABLE AS THE ORGANIC COMPONENT OF THE MIX.
- SAND BAG BERMS, FIBER ROLLS, AND POLYMERIC DIVERSIONS, INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS, MAY ALSO BE USED.



MAINTENANCE: INSPECT BARRIERS PERIODICALLY AND AFTER EACH SIGNIFICANT RAINFALL. REMOVE AND PROPERLY DISPOSE OF ACCUMULATED SEDIMENT WHENEVER IT REACHES 6 INCHES OR HALF THE HEIGHT OF THE BERM. INSPECT FOR BREAKS IN BERM, AND TEARS IN FABRIC, AND REPAIR.

REMOVAL: REMOVE WHEN UP–SLOPE AREAS HAVE BEEN STABILIZED. SEED AND MULCH AREA BENEATH BARRIER. PROPERLY DISPOSE OF ACCUMULATED SEDIMENT. EROSION CONTROL MIX SHALL BE DISPERSED IN VEGETATED AREA.

EROSION CONTROL MIX SEDIMENT BARRIER DETAIL

N.T.S.

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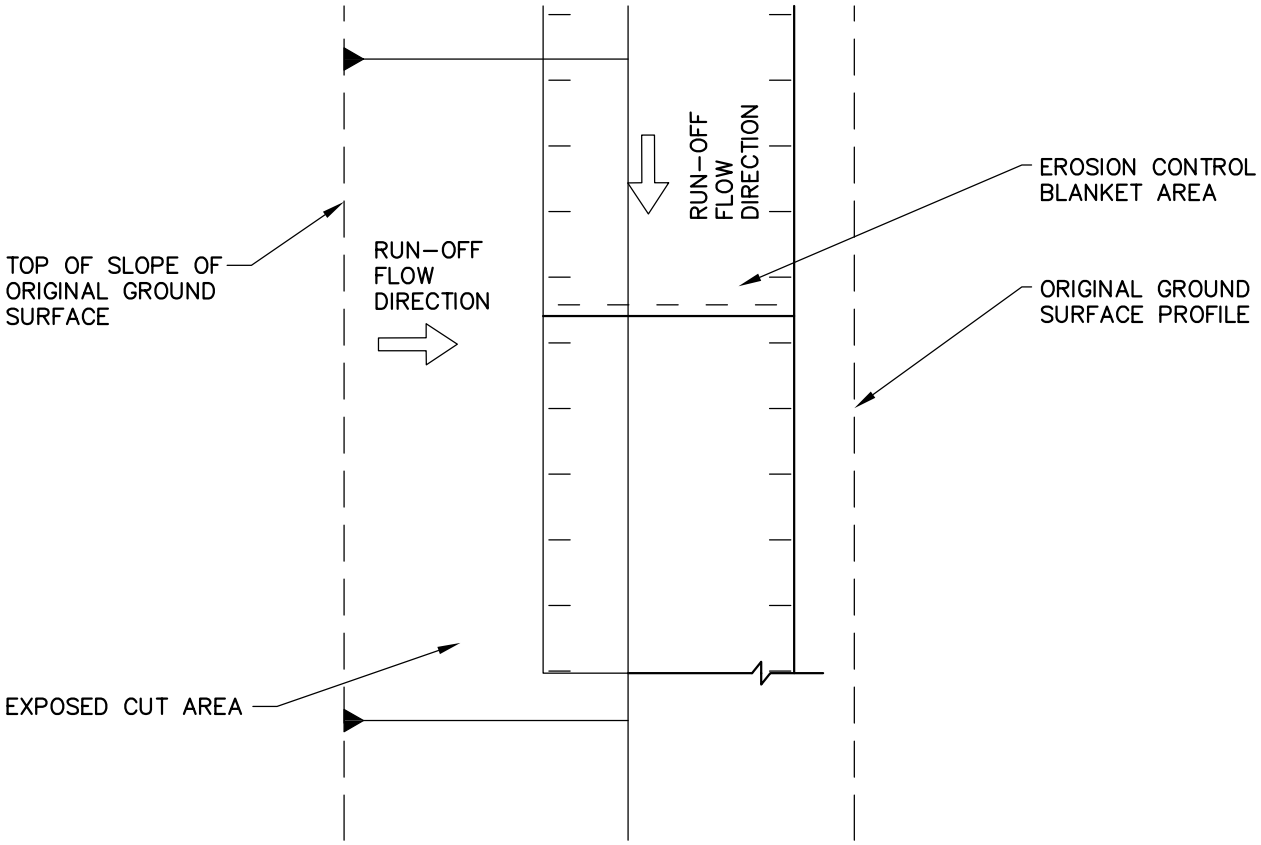
EROSION CONTROL MIX
SEDIMENT BARRIER DETAIL

DESIGNED BY: WHC	CHECKED BY: WHC
DRAWN BY: NTD	219431–fig 27.dwg

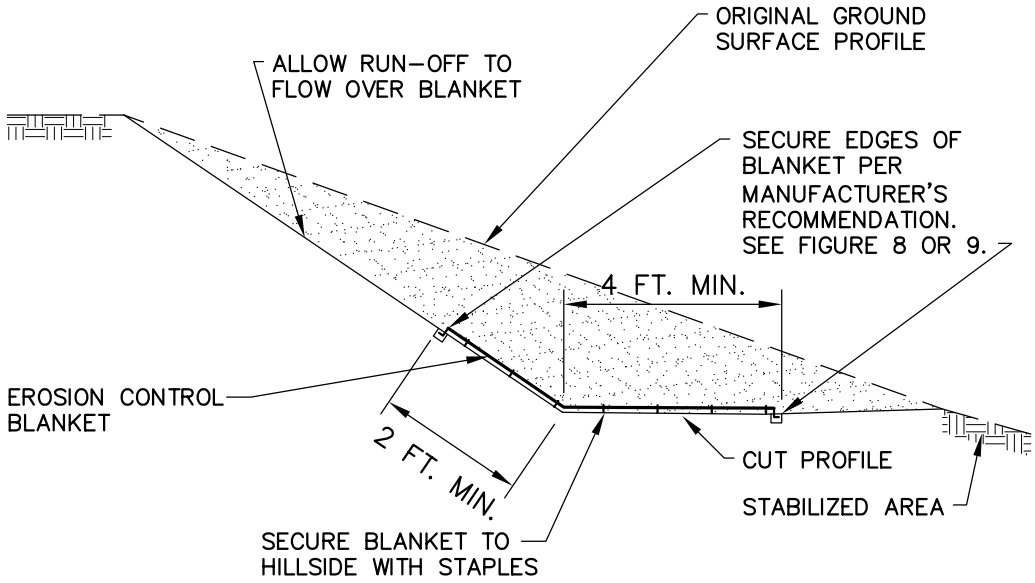
CALAIS LNG

JOB NO:	219431
DATE:	APRIL 2010
SCALE:	AS NOTED

FIGURE 27



PLAN



PROFILE

NOTES:

1. PREPARE SOIL AND INSTALL SIMILAR TO CHANNEL INSTALLATION, FIGURE 8.
2. OVERLAP SECTIONS OF BLANKET 4" MIN.
3. INSPECT FOR SIGNS OF EROSION UNDER BLANKET AND REPAIR.
4. NO REMOVAL REQUIRED.

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EROSION CONTROL BLANKET AT BASE OF CUT SLOPE

DESIGNED BY: CS/WHC	CHECKED BY: WHC
DRAWN BY: NTD	219431-fig 23R.dwg

CALAIS LNG

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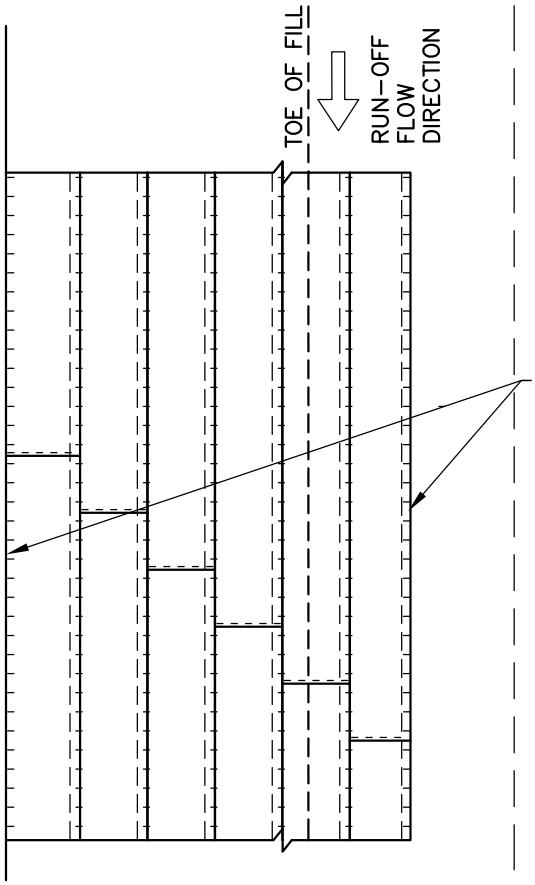
DATE: APRIL 2010	
SCALE: AS NOTED	

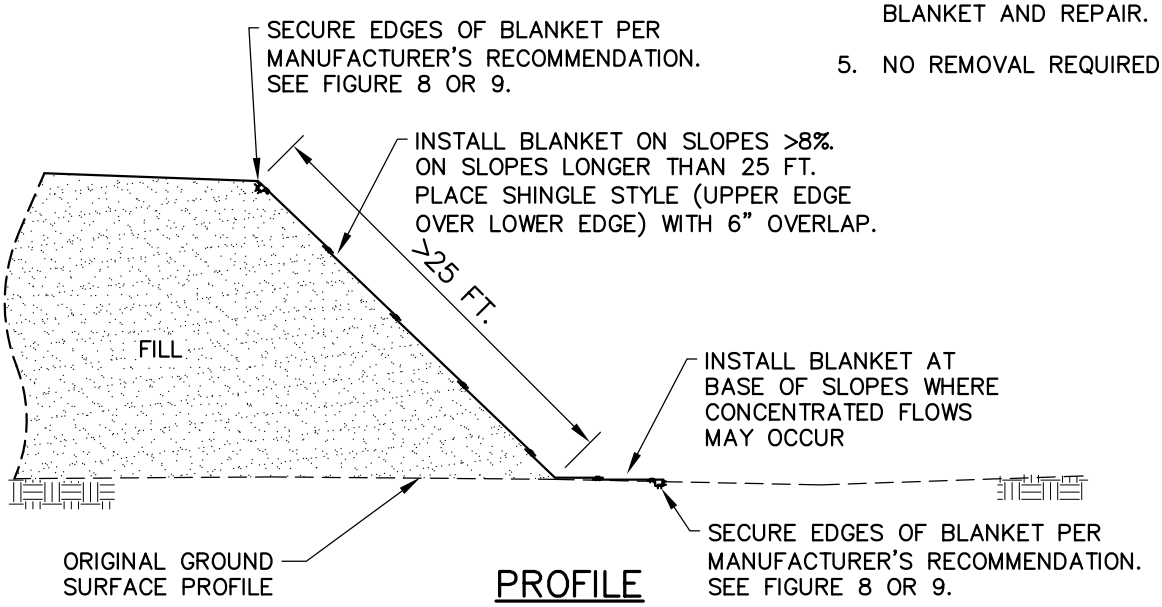
FIGURE 23R



PLAN

NOTES:

1. TO BE INSTALLED IN AREAS TO BE REVEGETATED.
2. PROPARE SOIL AND INSTALL SIMILAR TO CHANNEL INSTALLATION – FIGURE 8.
3. OVERLAP ENDS OF BLANKET 4" MIN.
4. INSPECT FOR SIGNS OF EROSION UNDER BLANKET AND REPAIR.
5. NO REMOVAL REQUIRED.



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EROSION CONTROL
BLANKET AT
BASE OF FILL AREA

DESIGNED BY: WHC	CHECKED BY: WHC
DRAWN BY: NTD	219431-fig 22R.dwg

CALAIS LNG

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SCALE:	AS NOTED

FIGURE 22R

LEGEND:

- EXISTING LIGHT POLE
- EXISTING UTILITY POLE
- EXISTING STONEWALL
- EXISTING LOCUS PROPERTY LINE
- EXISTING ABUTTING PROPERTY LINE
- EXISTING TREE LINE
- PROPOSED BUILDING
- PROPOSED ASPHALT SURFACE
- PROPOSED CONCRETE SURFACE
- PROPOSED GRAVEL SURFACE
- SW7.0 — PROPOSED SPOT GRADE
- LIMIT OF WORK
- EXISTING CONTOURS
- PROPOSED INDEX CONTOUR
- PROPOSED INTERMEDIATE CONTOUR
- EXISTING WETLANDS
- EXISTING STREAM CENTER LINE
- MEAN HIGH WATER
- MEAN LOW WATER
- SLOPE BREAKER – SEE E&SCR PLAN FIGURE 20
- DIVERSION BARRIER – SEE E&SCR PLAN FIGURE 3
- SEDIMENT BARRIER – SEE E&SCR PLAN FIGURE 3
- EROSION CONTROL BLANKET – SEE E&SCR PLAN FIGURE 8,9,22 OR 23
- CATCH BASIN INLET PROTECTION – SEE E&SCR PLAN FIGURE 24

FIG 12-5A | FIG 12-5B | FIG 12-5C
FIG 12-5D | FIG 12-5E | FIG 12-5F
FIG 12-5G | FIG 12-5H

KEY PLAN
SCALE: 1"=1000'

VERNAL POOL
VEGETATIVE UNDERDRAIN SOIL FILTER–3 UNDERDRAIN SEE DETAIL
PROPERTY LINE
WOOD & WIRE FENCE
250' VERNAL POOL BUFFER
TRAIL

DMH105
RIM:148.55
INV IN: 144.73 CB105C
INV IN: 145.13 CB105B
INV IN: 145.32 CB105A
INV OUT: 144.63 DMH104

CB105A
RIM: 146.40
INV OUT: 145.40 DMH105

PRECAST DRAINAGE MANHOLE (TYP.) 3 12–8A

CB105B
RIM: 146.29
INV OUT: 145.29 DMH105

DMH104
RIM:146.26
INV IN: 143.26 DMH105
INV OUT: 143.16 DMH103

CB103A
RIM:139.79
INV OUT: 136.34 DMH103

CATCHBASIN (TYP.) 1 12–8A

DS101
RIM: 0.00
INV IN: 125.50
INV OUT: 125.40 FES101

FES101
RIM: 130.00
INV IN: 125.25 DS101

STABILIZED CONSTRUCTION ENTRANCE. SEE E&SCR PLAN FIGURE 23.

CB105C
RIM: 148.50
INV OUT: 145.50 DMH105

DMH103
RIM:139.22
INV IN: 136.22 CB103A
INV IN: 136.22 CB103B
INV IN: 136.22 DMH104
INV OUT: 134.47 DMH102

CB103B
RIM: 139.79
INV OUT: 136.40 DMH103

ADMINISTRATION SECURITY BUILDING FFE=140.0

VISITOR PARKING

CB107A
RIM: 135.89
INV OUT: 132.09 DMH107

CB107B
RIM: 137.30
INV OUT: 134.30 DMH107

STAFF PARKING

U.S. ROUTE 1

7 12–8B ASPHALT PAVEMENT

CB–1000
RIM: 144.00
INV OUT: 128.17 DMH1000

CB109A
RIM: 135.71
INV OUT: 132.46 DMH109

WAREHOUSE /MAINTENANCE BUILDING FFE=139.0

DIVERSION STRUCTURE 6 12–8A
RIPRAP APRON 4 12–8A
FES102

DMH102
RIM: 135.63
INV IN: 126.46 DMH108
INV IN: 131.88 DMH103
INV OUT: 125.77

DMH108
RIM: 134.10
INV IN: 127.27 DMH108
INV IN: 130.20 DMH107
INV OUT: 126.77 DMH102

DMH107
RIM: 134.39
INV IN: 131.39 CB107B
INV IN: 131.39 CB107A
INV OUT: 130.89 DMH108

CB108A
RIM: 131.85
INV OUT: 128.85 DMH108

DMH108
RIM: 132.33
INV IN: 128.83 DMH109
INV IN: 128.26 CB108B
INV IN: 128.77 CB108A
INV OUT: 127.78 DMH106

CB108B
RIM: 131.85
INV OUT: 128.35 DMH108

FES1000
RIM: 128.67
INV IN: 127.00 DMH1000

DMH106
RIM: 133.17
INV IN: 129.87 DMH110
INV IN: 129.92 CB109A
INV OUT: 128.37 DMH108

DMH1000
RIM: 131.07
INV IN: 127.15 CB–1000
INV OUT: 127.05 FES1000

VEGETATED UNDERDRAIN SOIL FILTER–1 7 12–8A
UNDERDRAIN SYSTEM 11 12–8B
EMERGENCY SPILLWAY 5 12–8A
RIPRAP SLOPE 5 12–8B

USE EROSION CONTROL MIX BERM ADJACENT/IN WETLANDS. SEE E&SCR PLAN FIGURE 27.

5 12–8B RIPRAP SLOPE
11 12–8B UNDERDRAIN SYSTEM
7 12–8A VEGETATED UNDERDRAIN SOIL FILTER–3

LIMIT OF CLEARING

CB404A
RIM:133.00
INV OUT: 127.81 DMH404

SPILL CONTAINMENT CHANNEL
PIPE RACK (TYP.)

BAR SCALE
1" = 40'
CHECK GRAPHIC SCALE BEFORE USING

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GRADING PLAN

CALAIS LNG
TAX MAP 22, LOT 7 AND 8

ROUTE 1
CALAIS, MAINE

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SHEET 8 OF 20

SLOD FIGURE 12-5A REV

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DMH813
RIM: 122.25
INV IN: 116.75 DMH814
INV IN: 119.17 CB813B
INV IN: 119.17 CB813A
INV OUT: 117.96 DMH812

CB813B
RIM: 122.25
INV OUT: 119.25 DMH813

CB813A
RIM: 122.25
INV OUT: 119.25 DMH813

DMH803
RIM: 105.14
INV IN: 100.64 DMH804
INV OUT: 100.54 DMH802

CB802A
RIM: 97.91
INV OUT: 94.91 DMH802

DMH802
RIM: 97.84
INV IN: 93.34 DMH803
INV IN: 94.76 CB802A
INV IN: 94.76 CB802B
INV OUT: 93.24 DMH801

CB802B
RIM: 97.91
INV OUT: 94.91 DMH802

DMH801
RIM: 93.05
INV IN: 88.55 DMH802
INV OUT: 82.81 DS800

FES800B
INV OUT: 79.00 DS800

4 12-6A RIPRAP APRON

DS800
RIM: 93.50
INV IN: 82.50 DMH801
INV OUT: 80.00 FES800B
INV OUT: 80.00 FES800A

FES800A
INV OUT: 58.00 DS800

CB708B
RIM: 84.50
INV OUT: 77.99 DMH708A

DMH708A
RIM: 84.70
INV IN: 77.78 CB708A
INV IN: 77.78 CB708B
INV OUT: 77.68 DMH708B

CB708A
RIM: 84.50
INV OUT: 77.97 DMH708A

UNDERDRAIN SYSTEM 11 12-8B

VEGETATED UNDERDRAIN SOIL FILTER-E 7 12-6A

EMERGENCY SPILLWAY 5 12-6A

RIPRAP SLOPE 5 12-8B

FLAGGED TREE

DMH814
RIM: 135.60
INV IN: 132.10 DMH815
INV IN: 132.60 CB814B
INV IN: 132.60 CB814A
INV OUT: 131.48 DMH813

CB814B
RIM: 135.75
INV OUT: 132.75 DMH814

CB814A
RIM: 135.75
INV OUT: 132.75 DMH814

DMH815
RIM: 143.50
INV IN: 140.00 DMH816
INV OUT: 139.90 DMH814

CB816B
RIM: 150.50
INV OUT: 147.00 DMH816

DMH816
RIM: 150.30
INV IN: 147.30 DMH817
INV IN: 147.30 CB816A
INV IN: 148.80 CB816B
INV OUT: 145.97 DMH815

CB816A
RIM: 150.50
INV OUT: 147.50 DMH816

DMH817
RIM: 159.25
INV IN: 156.25 DMH818
INV OUT: 156.15 DMH818

CULVERT #3 HEADWALL INV=157.2 WITH RIP-RAP SPLASH PAD

INTERIOR LOT LINE

3H:2V TO RIP RAP SWALE 33% SLOPE

PROPOSED CURB

WOOD & WIRE FENCE

PROPERTY LINE

CEDAR POST MARKED "ANDREWS/FOX" STRAIGHT – HELD FOR LINE

ST. CROIX RIVER (TIDAL)
FLOW EBB

KEY PLAN
SCALE: 1"=1000'

FIG 12-8A FIG 12-8B FIG 12-8C
FIG 12-8D FIG 12-8E FIG 12-8F
FIG 12-8G FIG 12-8H

LEGEND:

- EXISTING LIGHT POLE
- EXISTING UTILITY POLE
- EXISTING STONEWALL
- EXISTING LOCUS PROPERTY LINE
- EXISTING ABUTTING PROPERTY LINE
- EXISTING TREE LINE
- PROPOSED BUILDING
- PROPOSED ASPHALT SURFACE
- PROPOSED CONCRETE SURFACE
- PROPOSED GRAVEL SURFACE
- BW97.0 + PROPOSED SPOT GRADE
- LIMIT OF WORK
- 95 EXISTING CONTOURS
- 95 PROPOSED INDEX CONTOUR
- 94 PROPOSED INTERMEDIATE CONTOUR
- EXISTING WETLANDS
- EXISTING STREAM CENTER LINE
- MEAN HIGH WATER
- MEAN LOW WATER
- SLOPE BREAKER – SEE E&SCR PLAN FIGURE 20
- DIVERSION BARRIER – SEE E&SCR PLAN FIGURE 3
- SEDIMENT BARRIER – SEE E&SCR PLAN FIGURE 3
- EROSION CONTROL BLANKET – SEE E&SCR PLAN FIGURE 8,9,22 OR 23
- CATCH BASIN INLET PROTECTION – SEE E&SCR PLAN FIGURE 24

40' 0 40'
BAR SCALE
1" = 40'
CHECK GRAPHIC SCALE BEFORE USING

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TAX MAP 22, LOT 7 AND 8

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SLOD FIGURE
12-5H REV

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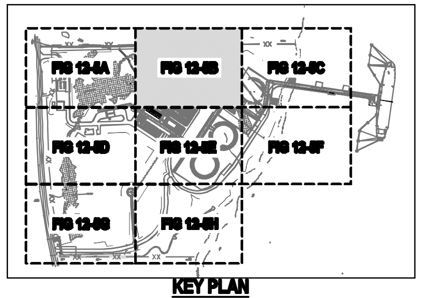
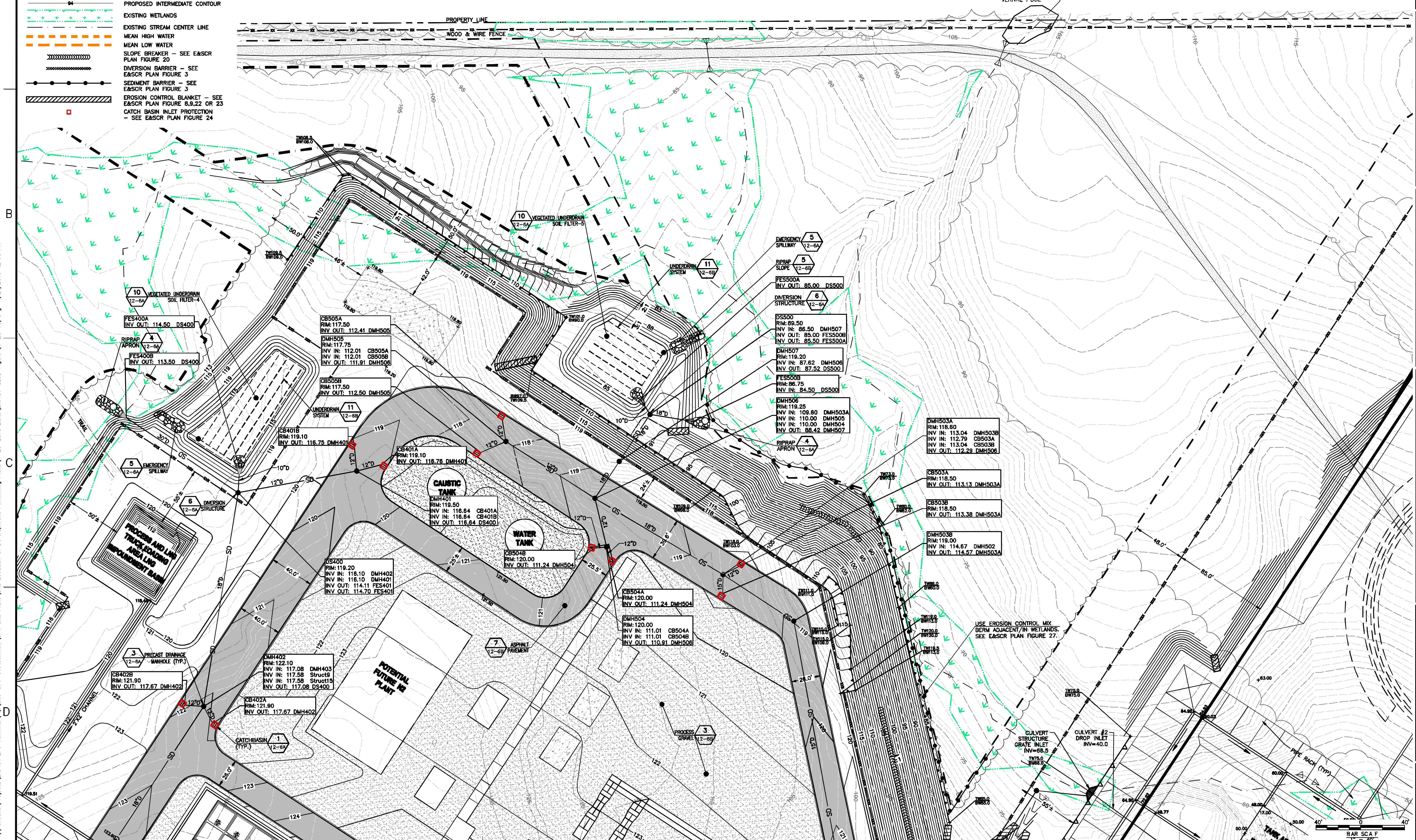
LEGEND:

	EXISTING LIGHT POLE
	EXISTING UTILITY POLE
	EXISTING STONEWALL
	EXISTING LOCUS PROPERTY LINE
	EXISTING ABUTTING PROPERTY LINE
	EXISTING TREE LINE
	PROPOSED BUILDING
	PROPOSED ASPHALT SURFACE
	PROPOSED CONCRETE SURFACE
	PROPOSED GRAVEL SURFACE
BW97.0 +	PROPOSED SPOT GRADE
	LIMIT OF WORK
95	EXISTING CONTOURS
95	PROPOSED INDEX CONTOUR
94	PROPOSED INTERMEDIATE CONTOUR
	EXISTING WETLANDS
	EXISTING STREAM CENTER LINE
	MEAN HIGH WATER
	MEAN LOW WATER
	SLOPE BREAKER – SEE E&SCR PLAN FIGURE 20
	DIVERSION BARRIER – SEE E&SCR PLAN FIGURE 3
	SEDIMENT BARRIER – SEE E&SCR PLAN FIGURE 3
	EROSION CONTROL BLANKET – SEE E&SCR PLAN FIGURE 8,9,22 OR 23
	CATCH BASIN INLET PROTECTION – SEE E&SCR PLAN FIGURE 24



KEY PLAN
SCALE: 1"=1000'



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GRADING PLAN

CALAIS LNG
TAX MAP 22, LOT 7 AND 8

ROUTE 1
CALAIS, MAINE

JOB NO.:
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SLOD FIGURE 12-5B REV

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KEY PLAN
SCALE: 1"=1000'

LEGEND:

- EXISTING LIGHT POLE
- EXISTING UTILITY POLE
- EXISTING STONEWALL
- EXISTING LOCUS PROPERTY LINE
- EXISTING ABUTTING PROPERTY LINE
- EXISTING TREE LINE
- PROPOSED BUILDING
- PROPOSED ASPHALT SURFACE
- PROPOSED CONCRETE SURFACE
- PROPOSED GRAVEL SURFACE
- PROPOSED SPOT GRADE
- LIMIT OF WORK
- EXISTING CONTOURS
- PROPOSED INDEX CONTOUR
- PROPOSED INTERMEDIATE CONTOUR
- EXISTING WETLANDS
- EXISTING STREAM CENTER LINE
- MEAN HIGH WATER
- MEAN LOW WATER
- SLOPE BREAKER – SEE E&SCR PLAN FIGURE 20
- DIVERSION BARRIER – SEE E&SCR PLAN FIGURE 3
- SEDIMENT BARRIER – SEE E&SCR PLAN FIGURE 3
- EROSION CONTROL BLANKET – SEE E&SCR PLAN FIGURE 8,9,22 OR 23
- CATCH BASIN INLET PROTECTION – SEE E&SCR PLAN FIGURE 24

BLAZED TREE
20'± NORTH OF LINE

PROPERTY LINE
WOOD & WIRE FENCE

CASTLE HILL DRIVE

1:3 ROCK CUT (TYP.)

JETTY ABUTMENT DESIGN POINT

SPILL CONTAINMENT CHANNEL

TANK 3
(FUTURE)

MARINE TERMINAL LNG IMPOUNDMENT BASIN

6% GRADE ALLOWABLE

SPILL CONTAINMENT CHANNEL

SPILL CONTAINMENT CHANNEL

UTILITIES

1 12-6A CATCHBASIN (TYP.)

CB600B
RIM: 44.50
INV OUT: 41.00 DMH600

DMH600
RIM: 67.17
INV IN: 41.10 CB600A
INV IN: 41.10 CB600B
INV OUT: 41.25 DMH601

CB600A
RIM: 44.75
INV OUT: 41.00 DMH600

CB704B
RIM: 53.00
INV OUT: 51.46 DMH704

DMH704
RIM: 54.70
INV IN: 51.33 CB704A
INV IN: 51.33 CB704B
INV OUT: 51.33 DS700

6 12-6A DIVERSION STRUCTURE

TRENCH DRAIN
RIM: 42.58
INV OUT: 41.03 DMH601

DMH601
RIM: 66.00
INV IN: 41.03 DMH600
INV IN: 41.36 TRENCH DRAIN

3 12-6A PRECAST DRAINAGE MANHOLE (TYP.)

FES600A
INV OUT: 39.50

5 12-6B RIPRAP SLOPE

5 12-6A EMERGENCY SPILLWAY

7 12-6A VEGETATIVE UNDERDRAIN SOIL FILTER-6

11 12-6B UNDERDRAIN SYSTEM

USE EROSION CONTROL MIX BERM ADJACENT IN WETLANDS. SEE E&SCR PLAN FIGURE 27.

CB704A
RIM: 53.25
INV OUT: 51.46 DMH704

FES700B
INV OUT: 45.00 DS700

4 12-6A RIPRAP APRON

ST. CROIX RIVER
(TIDAL)
FLOW EBB

40' 0 40'
BAR SCALE
1" = 40'
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GRADING PLAN

CALAIS LNG
TAX MAP 22, LOT 7 AND 8

ROUTE 1
CALAIS, MAINE

JOB NO.:
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SCALE: 1"=40'
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SLOD FIGURE
12-5C REV

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WAREHOUSE /MAINTENANCE BUILDING FFE=135.0

CONTROL ROOM

LNG TRUCK DRIVERS BLDG

FIREWATER POND

FIREWATER PUMPHOUSE INTAKE STRUCTURE FFE=135.0

U.S. ROUTE 1

PROPERTY LINE WOOD & WIRE FENCE

SECURITY FENCE

SPILL CONTAINMENT CHANNEL

PIPE RACK (TYP)

LNG TRUCK LOADING AREA

RETAINING WALL

FIREPOND OUTFLOW LINE.

USE EROSION CONTROL MIX BERM ADJACENT/IN WETLANDS. SEE E&SCR PLAN FIGURE 27.

3'Wx2'D RIP RAP SWALE 4% SLOPE

1:4 ROCK CUT (TYP)

CULVERT #1 HEADWALL INV=125.5 WITH RIPRAP SPLASH PAD

CULVERT #1 HEADWALL INV=126.4 WITH RIPRAP

CB101 RIM: 134.64 INV OUT: 131.64 DMH110

DMH110 RIM: 134.94 INV IN: 131.54 DMH111 INV IN: 131.55 CB110B INV IN: 131.46 CB110A INV OUT: 130.84 DMH109

CB110B RIM: 134.64 INV OUT: 131.64 DMH110

DMH111 RIM: 136.08 INV IN: 132.22 DMH112 INV OUT: 132.09 DMH110

CB112A RIM: 136.63 INV OUT: 133.63 DMH112

DMH112 RIM: 136.97 INV IN: 133.55 CB112A INV IN: 133.59 CB112B INV OUT: 133.15 DMH111

CB112B RIM: 136.67 INV OUT: 133.67 DMH112

FES202 RIM: 129.17 INV IN: 127.50 CB202

CB202 RIM: 129.19 INV OUT: 127.52 FES202

FES200 RIM: 138.00 INV IN: 136.50 DMH201

CB201A RIM: 138.37 INV OUT: 135.37 DMH203

CB201B RIM: 138.37 INV OUT: 135.37 DMH201

DMH201 RIM: 138.64 INV IN: 135.32 CB201B INV IN: 135.32 CB201A INV OUT: 137.04 FES200

DMH406 RIM: 136.50 INV IN: 131.50 CB406A INV IN: 131.50 CB406B INV OUT: 131.40 DMH405

CB406A RIM: 136.50 INV OUT: 132.14 DMH406

CB406B RIM: 136.50 INV OUT: 133.32 DMH406

DMH405 RIM: 130.50 INV IN: 124.71 DMH406 INV IN: 124.71 CB405A INV IN: 124.31 CB405B INV OUT: 124.21 DMH404

CB405A RIM: 129.80 INV OUT: 124.98 DMH405

CB405B RIM: 130.40 INV OUT: 126.42 DMH405

DMH404 RIM: 126.40 INV IN: 122.16 DMH405 INV IN: 122.56 CB404A INV OUT: 122.06 DMH403

CB404A RIM: 126.68 INV OUT: 125.68 DMH404

DMH811 RIM: 135.79 INV IN: 132.59 CB811A INV IN: 132.59 CB811B INV OUT: 132.13 DMH810

CB811A RIM: 135.73 INV OUT: 132.73 DMH811

CB811B RIM: 135.73 INV OUT: 132.73 DMH811

CB810A RIM: 128.68 INV OUT: 125.68 DMH810

DMH810 RIM: 128.48 INV IN: 125.48 DMH811 INV IN: 125.48 CB810A INV OUT: 124.98 DMH809

EMERGENCY SPILLWAY (5 / 12-6A)

RIPRAP SPILLWAY (5 / 12-6B)

RIPRAP APRON (4 / 12-6A)

SPEED TABLE (9 / 12-6B)

UNDERDRAIN SYSTEM (11 / 12-6B)

VEGETATED UNDERDRAIN SOIL FILTER-2 (7 / 12-6A)

CATCHBASIN (TYP.) (1 / 12-6A)

PRECAST DRAINAGE MANHOLE (TYP.) (3 / 12-6A)

SECURITY FENCE

LEGEND:

- EXISTING LIGHT POLE
- EXISTING UTILITY POLE
- EXISTING STONEWALL
- EXISTING LOCUS PROPERTY LINE
- EXISTING ABUTTING PROPERTY LINE
- EXISTING TREE LINE
- PROPOSED BUILDING
- PROPOSED ASPHALT SURFACE
- PROPOSED CONCRETE SURFACE
- PROPOSED GRAVEL SURFACE
- BW97.0 + PROPOSED SPOT GRADE
- LIMIT OF WORK
- 95 EXISTING CONTOURS
- 95 PROPOSED INDEX CONTOUR
- 94 PROPOSED INTERMEDIATE CONTOUR
- EXISTING WETLANDS
- EXISTING STREAM CENTER LINE
- MEAN HIGH WATER
- MEAN LOW WATER
- SLOPE BREAKER – SEE E&SCR PLAN FIGURE 20
- DIVERSION BARRIER – SEE E&SCR PLAN FIGURE 3
- SEDIMENT BARRIER – SEE E&SCR PLAN FIGURE 3
- EROSION CONTROL BLANKET – SEE E&SCR PLAN FIGURE 8,9,22 OR 23
- CATCH BASIN INLET PROTECTION – SEE E&SCR PLAN FIGURE 24

KEY PLAN
SCALE: 1"=1000'

FIG 12-5A | FIG 12-5B | FIG 12-5C | FIG 12-5D | FIG 12-5E | FIG 12-5F | FIG 12-5G | FIG 12-5H

BAR SCALE 1" = 40' — 40' 0 40'
CHECK GRAPHIC SCALE BEFORE USING

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GRADING PLAN

CALAIS LNG
TAX MAP 22, LOT 7 AND 8

ROUTE 1
CALAIS, MAINE

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SLOD FIGURE 12-5D REV

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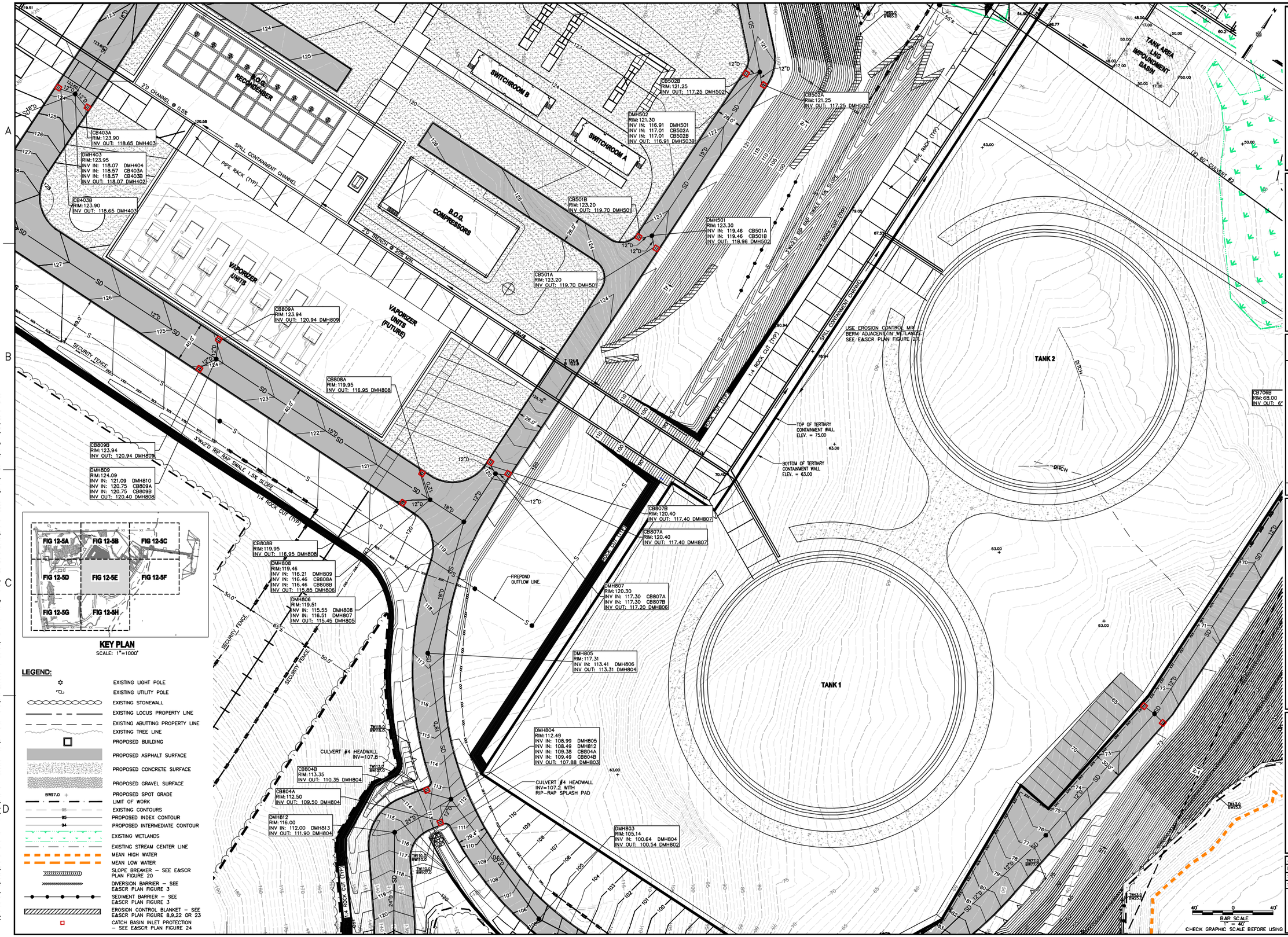

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GRADING PLAN

CALAIS LNG
TAX MAP 22, LOT 7 AND 8

ROUTE 1
CALAIS, MAINE

JOB NO.:
DATE: APRIL 2010
SCALE: 1"=40'
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SLOD FIGURE 12-5E REV

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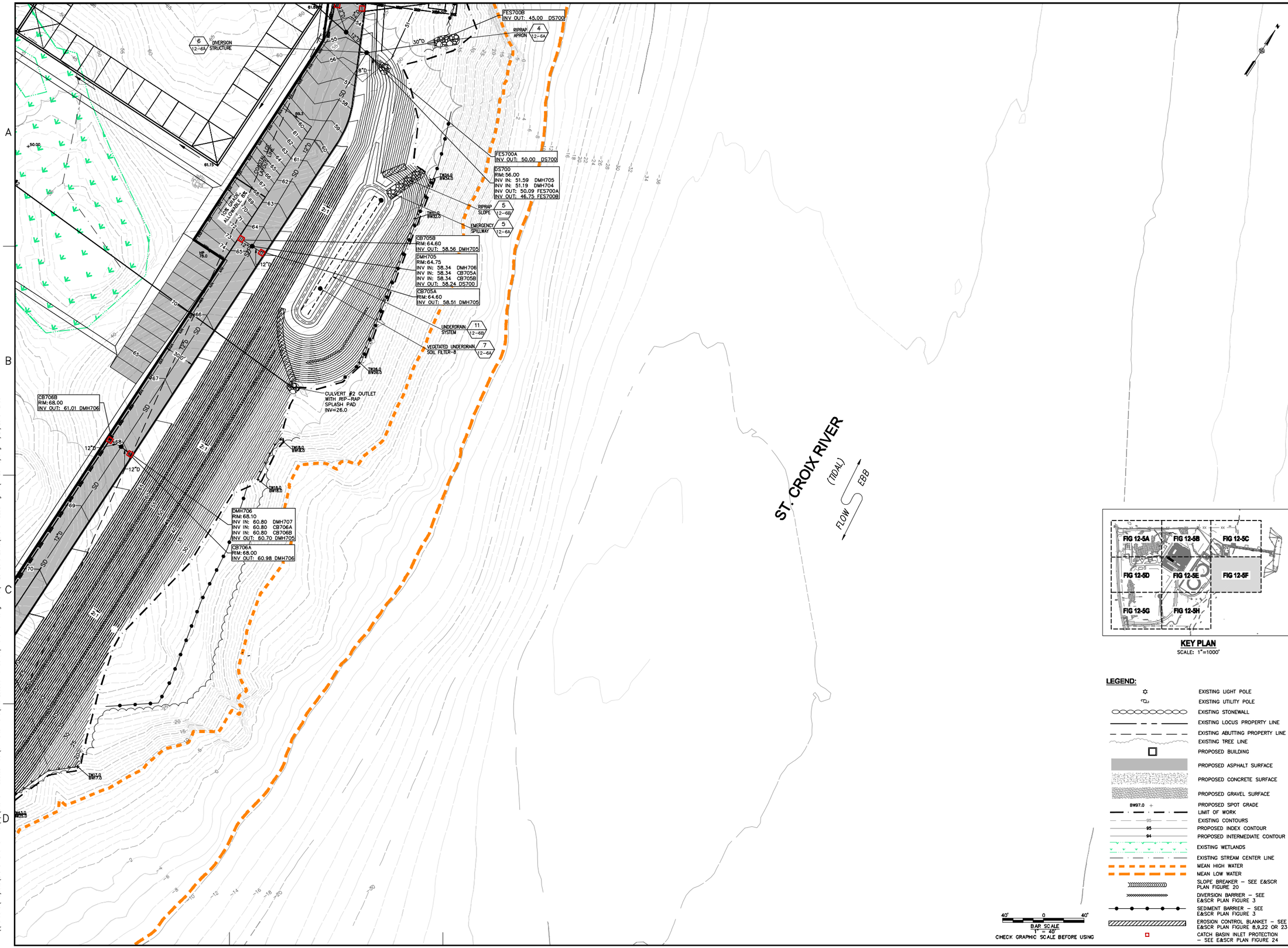

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GRADING PLAN

CALAIS LNG
TAX MAP 22, LOT 7 AND 8

ROUTE 1
CALAIS, MAINE

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SLOD FIGURE
12-5F REV

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KEY PLAN
SCALE: 1"=1000'

LEGEND:

- EXISTING LIGHT POLE
- EXISTING UTILITY POLE
- EXISTING STONEWALL
- EXISTING LOCUS PROPERTY LINE
- EXISTING ABUTTING PROPERTY LINE
- EXISTING TREE LINE
- PROPOSED BUILDING
- PROPOSED ASPHALT SURFACE
- PROPOSED CONCRETE SURFACE
- PROPOSED GRAVEL SURFACE
- BW97.0 — PROPOSED SPOT GRADE
- LIMIT OF WORK
- 95 — EXISTING CONTOURS
- 95 — PROPOSED INDEX CONTOUR
- 94 — PROPOSED INTERMEDIATE CONTOUR
- EXISTING WETLANDS
- EXISTING STREAM CENTER LINE
- MEAN HIGH WATER
- MEAN LOW WATER
- SLOPE BREAKER – SEE E&SCR PLAN FIGURE 20
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- SEDIMENT BARRIER – SEE E&SCR PLAN FIGURE 3
- EROSION CONTROL BLANKET – SEE E&SCR PLAN FIGURE 8,9,22 OR 23
- CATCH BASIN INLET PROTECTION – SEE E&SCR PLAN FIGURE 24

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GRADING PLAN

CALAIS LNG
TAX MAP 22, LOT 7 AND 8

ROUTE 1
CALAIS, MAINE

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SLOD FIGURE 12-5G REV

SLOD Table 12-10 rev: Water Quality Volumes for Treated Watersheds

PWS #	Treatment Measure	Total Contributing Area (sq. ft.)	Total Impervious Area (sq. ft.)		Total Non-Impervious Area (sq. ft.)		Total Undeveloped Area (sq. ft.)	Water Quality Volume (cu. ft.)	
			Pre-Treated*	Not Pre-Treated	Pre-Treated*	Not Pre-Treated		Required per Ch 500	Provided
3	VUSF 1	310,835	117,672	13,161	60,935	3,560	115,507	8,621	10,015
4	VUSF 2	16,943	3,126	6,016	3,629	2,325	1,847	773	1,924
5	VUSF 3	20,275	0	0	0	19,215	1,060	512	835
6	VUSF 4	163,991	66,654	398	19,104	36,626	41,209	5,117	7,723
7	VUSF 5	244,709	73,891	733	16,967	9,490	143,628	4,545	6,741
8	VUSF 6	69,446	7,161	45,062	1,085	10,285	5,853	1,851	4,907
9	VUSF 7	103,433	53,760	125	16,224	6,567	26,757	2,154	4,601
10	VUSF 8	279,710	100,150	11,581	105,947	19,366	42,703	5,440	9,588
11	Vegetated Buffer	10,626	0	10,626	0	0	0	N/A	N/A
Total (sq. ft.)		1,219,968	510,116		331,325		378,527	29,013	46,334
Total (acres)		28.0	11.7		7.6		8.7		

SLOD Table 12-11 rev: Comparison of Treatment Provided vs. Chapter 500 Requirements

	Total Developed		Impervious		Non-Impervious	
	sf	acres	sf	acres	sf	acres
Total Area (sq. ft.)	921,359	21.2	526,777	12.1	394,582	9.1
Total Area Treated (sq. ft.)	841,441	19.3	510,116	11.7	331,325	7.6
% of Total Area Treated	91.0%		96.7%		83.5%	
% Requirement by Chap. 500	80%		95%		N/A	
Minimum Area Treated?	Yes		Yes		N/A	

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POST-DEVELOPMENT STORMWATER TREATMENT WATERSHED PLAN

CALAIS LNG
TAX MAP 22, LOT 7 AND 8

ROUTE 1
CALAIS, MAINE

JOB NO.:
DATE: APRIL 2010
SCALE: 1"=120'
SHEET 3 OF 20

SLOD FIGURE
12-3D

40' 0 40' 80'

BAR SCALE
1" = 40'
CHECK GRAPHIC SCALE BEFORE USING

WOODARD &CURRAN
41 Hutchins Drive
Portland, Maine 04102
800-426-4262 | www.woodardcurran.com
COMMITMENT & INTEGRITY DRIVE RESULTS

INTERCONNECT FACILITY SITE PLAN

DESIGNED BY: WHC	CHECKED BY: WHC
DRAWN BY: NTD	2010.4.20 FIG 12-7B.dwg

CALAIS LNG

JOB NO:	219431
DATE:	APRIL 2010
SCALE:	1" = 40'

SLOD FIGURE 12-7B REV

40' 0 40' 80'

BAR SCALE
1" = 40'
CHECK GRAPHIC SCALE BEFORE USING

WOODARD &CURRAN
41 Hutchins Drive
Portland, Maine 04102
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COMMITMENT & INTEGRITY DRIVE RESULTS

MAINLINE VALVE SITE PLAN

DESIGNED BY: WHC	CHECKED BY: WHC
DRAWN BY: NTD	2010.4.20 FIG 12-7A.dwg

CALAIS LNG

JOB NO:	219431
DATE:	APRIL 2010
SCALE:	1" = 40'

SLOD FIGURE
12-7A REV